

## General

### Title

Adult trauma care: does the hospital have regular, structured and multidisciplinary peer review of the quality of care provided to injured patients age 18 years and older that includes review of adverse events and deaths AND reporting of resultant quality improvement actions?

### Source(s)

Guide to quality indicators in adult trauma care. Version 3. Calgary (AB): Quality of Trauma in Adult Care, University of Calgary; 2013 Jan 29. 129 p. [111 references]

## Measure Domain

### Primary Measure Domain

Clinical Quality Measures: Structure

### Secondary Measure Domain

Does not apply to this measure

## Brief Abstract

### Description

This measure is used to assess whether the hospital has regular, structured and multidisciplinary peer review of the quality of care provided to injured patients age 18 years and older that includes review of adverse events and deaths AND reporting of resultant quality improvement actions.

### Rationale

Each year, injuries affect 700 million people worldwide and result in more than five million deaths. In many countries, injuries are the leading cause of death among those under the age of 45 years. The human and societal burden is even greater with many survivors never returning to school, work or their "regular" lives.

Health care services provide patients with treatment for what is a major cause of morbidity and death. Yet medical errors and substandard care threaten trauma care. Half of all patients with major traumatic

injuries do not receive recommended care, medical errors are common in critically ill trauma patients and preventable trauma deaths in hospital are widely reported. The World Health Organization (WHO), professional trauma organizations (e.g., American College of Surgeons [ACS], Trauma Association of Canada and Royal Australasian College of Surgeons) and accreditation bodies have promoted efforts to improve the quality of care delivered to injured patients. However, before the quality of injury care can be improved, it needs to be measured using reliable and valid measures of health care quality.

These indicators can be used to assess patient safety, and to evaluate and improve quality of care by incorporating these measures into local, regional or national quality improvement efforts. Implementing a consistent approach to measurement (same indicators, same definitions, same data elements, same reporting format) would provide institutions with reliable performance data that is necessary for surveillance (e.g., tertiary survey completion), to track local problems (e.g., adverse events – specifically missed injuries), evaluate the effects of interventions or program changes (e.g., tertiary survey protocol) and provide comparisons across centers (e.g., benchmarking adverse events using programs such as the ACS's Trauma Quality Improvement Program). Well-designed, carefully evaluated and appropriately implemented quality indicators (QIs) may be essential tools for guiding efforts to improve health and healthcare.

This indicator is intended to identify trauma centers with regular, structured and multidisciplinary peer review and reporting of the quality of care provided to patients with injuries.

## Evidence for Rationale

Guide to quality indicators in adult trauma care. Version 3. Calgary (AB): Quality of Trauma in Adult Care, University of Calgary; 2013 Jan 29. 129 p. [111 references]

## Primary Health Components

Trauma care; injury; multidisciplinary peer review; adverse events; death; quality improvement actions; reporting

## Denominator Description

This measure applies to hospitals (one hospital at a time).

## Numerator Description

Hospitals with regular, structured and multidisciplinary peer review of the quality of care provided to injured patients age 18 years and older that includes review of adverse events and deaths AND reporting of resultant quality improvement actions (see the related "Numerator Inclusions/Exclusions" field)

## Evidence Supporting the Measure

### Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Additional Information Supporting Need for the Measure

One study demonstrated good agreement between peer review for preventable deaths and autopsy review (West, 1982). One study demonstrated that implementation of a trauma quality improvement program that included this quality indicator was associated with reduced hospital mortality (Chadbunchachai et al., 2001). Eight studies demonstrated good intra-rater and inter-rater reliability for peer review of medical errors and preventable death (Demetriades et al., 2001; Draaisma, de Haan, & Goris, 1989; Esposito et al., 1995; Hill et al., 1992; Karmy-Jones et al., 1992; Kelly, Nicholl, & Turner, 2002; McDermott, Corder, & Tremayne, 1997; Pories et al., 1989). One study demonstrated poor agreement between peer-review and Trauma Score – Injury Severity Score (TRISS) (mortality prediction model) (Fallon et al., 1997).

## Evidence for Additional Information Supporting Need for the Measure

Chadbunchachai W, Sriwatt S, Kulleab S, Saranrittichai S, Chumsri J, Jaikwang P. The comparative study for quality of trauma treatment before and after the revision of trauma audit filter, Khon Kaen hospital 1998. J Med Assoc Thai. 2001 Jun;84(6):782-90. [PubMed](#)

Demetriades D, Sava J, Alo K, Newton E, Velmahos GC, Murray JA, Belzberg H, Asensio JA, Berne TV. Old age as a criterion for trauma team activation. J Trauma. 2001 Oct;51(4):754-6; discussion 756-7. [PubMed](#)

Draaisma JM, de Haan AF, Goris RJ. Preventable trauma deaths in The Netherlands--a prospective multicenter study. J Trauma. 1989 Nov;29(11):1552-7. [PubMed](#)

Esposito TJ, Sanddal ND, Hansen JD, Reynolds S. Analysis of preventable trauma deaths and inappropriate trauma care in a rural state. J Trauma. 1995 Nov;39(5):955-62. [PubMed](#)

Fallon WF, Barnoski AL, Mancuso CL, Tinnell CA, Malangoni MA. Benchmarking the quality-monitoring process: a comparison of outcomes analysis by trauma and injury severity score (TRISS) methodology with the peer-review process. J Trauma. 1997 May;42(5):810-5; discussion 815-7. [PubMed](#)

Hill DA, Lennox AF, Neil MJ, Sheehy JP. Evaluation of TRISS as a means of selecting trauma deaths for clinical peer review. Aust N Z J Surg. 1992 Mar;62(3):204-8. [PubMed](#)

Karmy-Jones R, Copes WS, Champion HR, Weigelt J, Shackford S, Lawnick M, Rozycki GS, Hollingsworth-Fridlund P, Klein J. Results of a multi-institutional outcome assessment: results of a structured peer review of TRISS-designated unexpected outcomes. J Trauma. 1992 Feb;32(2):196-203. [PubMed](#)

Kelly AM, Nicholl J, Turner J. Determining the most effective level of TRISS-derived probability of survival for use as an audit filter. Emerg Med (Fremantle). 2002 Jun;14(2):146-52. [PubMed](#)

McDermott FT, Corder SM, Tremayne AB. Reproducibility of preventable death judgments and problem identification in 60 consecutive road trauma fatalities in Victoria, Australia. Consultative Committee on Road Traffic Fatalities in Victoria. J Trauma. 1997 Nov;43(5):831-9. [PubMed](#)

Pories SE, Gamelli RL, Pilcher DB, Vacek A, Jones J, Harris F, Goodwin G. Practical evaluation of trauma deaths. J Trauma. 1989 Dec;29(12):1607-10. [PubMed](#)

West JG. Validation of autopsy method for evaluating trauma care. Arch Surg. 1982 Aug;117(8):1033-5. [PubMed](#)

## Extent of Measure Testing

Using a modification of the RAND/University of California, Los Angeles (UCLA) Appropriateness Methodology, a panel of 19 injury and quality of care experts serially rated and revised quality indicators identified from a systematic review of the literature and international audit of trauma center quality improvement practices. The quality indicators developed by the panel were sent to 133 verified trauma centers in the United States, Canada, Australia, and New Zealand for evaluation.

A total of 84 quality indicators were rated and revised by the expert panel over 4 rounds of review producing 31 quality indicators of structure (n=5), process (n=21), and outcome (n=5), designed to assess the safety (n=8), effectiveness (n=17), efficiency (n=6), timeliness (n=16), equity (n=2), and patient-centeredness (n=1) of injury care spanning prehospital (n=8), hospital (n=19), and posthospital (n=2) care and secondary injury prevention (n=1). A total of 101 trauma centers (76% response rate) rated the indicators (1=strong disagreement, 9=strong agreement) as targeting important health improvements (median score 9, interquartile range [IQR] 8 to 9), easy to interpret (median score 8, IQR 8 to 9), easy to implement (median score 8, IQR 7 to 8), and globally good indicators (median score 8, IQR 8 to 9).

Thirty-one evidence-informed quality indicators of adult injury care were developed, shown to have content validity, and can be used as performance measures to guide injury care quality improvement practices.

Trauma centers rated the indicator "does the hospital have regular, structured and multidisciplinary peer review of the quality of care provided to injured patients age 18 years and older that includes review of adverse events and deaths AND reporting of resultant quality improvement actions?" as targeting important health improvements (median score 9, IQR 8 to 9), easy to interpret (median score 8.5, IQR 7 to 9), easy to implement (median score 8, IQR 7 to 9), and globally a good indicator (median score 9, IQR 8 to 9).

## Evidence for Extent of Measure Testing

Santana MJ, Stelfox HT, Trauma Quality Indicator Consensus Panel. Development and evaluation of evidence-informed quality indicators for adult injury care. *Ann Surg*. 2014 Jan;259(1):186-92. [35 references] [PubMed](#)

## State of Use of the Measure

### State of Use

Current routine use

### Current Use

not defined yet

## Application of the Measure in its Current Use

### Measurement Setting

Hospital Inpatient

## Professionals Involved in Delivery of Health Services

not defined yet

## Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

## Statement of Acceptable Minimum Sample Size

Does not apply to this measure

## Target Population Age

Does not apply to this measure

## Target Population Gender

Does not apply to this measure

## National Strategy for Quality Improvement in Health Care

### National Quality Strategy Aim

Better Care

### National Quality Strategy Priority

## Institute of Medicine (IOM) National Health Care Quality Report Categories

### IOM Care Need

Not within an IOM Care Need

### IOM Domain

Not within an IOM Domain

## Data Collection for the Measure

### Case Finding Period

Unspecified

## Denominator Sampling Frame

Health care or public health organization

## Denominator (Index) Event or Characteristic

Does not apply to this measure

## Denominator Time Window

not defined yet

## Denominator Inclusions/Exclusions

### Inclusions

This measure applies to hospitals (one hospital at a time).

### Exclusions

Unspecified

## Exclusions/Exceptions

not defined yet

## Numerator Inclusions/Exclusions

### Inclusions

Hospitals with regular, structured and multidisciplinary peer review of the quality of care provided to injured patients age 18 years and older that includes review of adverse events and deaths AND reporting of resultant quality improvement actions

Note:

*Regular* indicates scheduled recurrent meetings more than once a year (e.g., monthly).

*Structured* indicates an organized and systematic process that is standardized (i.e., same process each meeting).

*Multidisciplinary* indicates participation of experts from the multiple patient care domains pertinent to injury management.

*Reporting* indicates that results of the multidisciplinary peer review process are summarized and resulting quality improvement actions documented and periodically reported (e.g., annual peer review report outlining improvement opportunities identified and actions taken).

### Exclusions

Unspecified

## Numerator Search Strategy

Fixed time period or point in time

## Data Source

Health professional survey

## Type of Health State

Does not apply to this measure

## Instruments Used and/or Associated with the Measure

Unspecified

## Computation of the Measure

### Measure Specifies Disaggregation

Does not apply to this measure

### Scoring

Dichotomous

### Interpretation of Score

Desired value is presence of a characteristic

### Allowance for Patient or Population Factors

not defined yet

### Standard of Comparison

not defined yet

## Identifying Information

### Original Title

Protocol for peer review & reporting of quality of injury care.

### Measure Collection Name

Quality Indicators in Adult Trauma Care

### Measure Set Name

Hospital Indicators

### Submitter

## Developer

Quality of Trauma in Adult Care (QTAC) Team, University of Calgary - Academic Institution

## Funding Source(s)

The project was supported by a Partnerships in Health System Improvement Grant (PHE-91429) from the Canadian Institutes of Health Research and Alberta Innovates Health Solutions. Funding sources had no role in the design, conduct, or reporting of this study.

## Composition of the Group that Developed the Measure

- Dr. H. Thomas Stelfox, Principal Investigator, University of Calgary
- Dr. Maria-Jose Santana, Co-investigator, University of Calgary
- Diane Lorenzetti, Library Science, University of Calgary
- Jamie Boyd, Research Coordinator, University of Calgary
- Nancy Clayden, Research Assistant, University of Calgary
- Colleen M. Sharp, Research Assistant, University of Calgary

### Expert Panel

- Dr. Mark Asbridge, Faculty Member, Dalhousie University
- Dr. Chad G. Ball, Fellowship in Trauma, Critical Care and Hepatobiliary Surgery, Calgary
- Dr. Peter Cameron, Professor and Head of Critical Care Division, Head of Victorian State Trauma Registry, Associate Director of National Trauma Research Institute, Melbourne, Australia
- Diane Dyer, Consultant, Alberta Health Services
- Dr. Louis Hugo Francescutti, Past President of Royal College of Physicians and Surgeons of Canada, Professor, University of Alberta
- Marie Claire Fortin, Clinical Registries Manager, CIHI and Faculty Member, University of Toronto
- Dr. Ken Jaffe, Professor of Rehabilitation Medicine and Adjunct Professor of Pediatrics and Neurological Surgery, University of Washington School of Medicine
- Dr. Andrew W. Kirkpatrick, Past President Trauma Association of Canada, Professor of Critical Care Medicine and Surgery, University of Calgary
- Dr. John Kortbeek, Professor and Head of Department of Surgery, University of Calgary
- Dr. Karen Kmetik, Vice President of Performance Improvement American Medical Association
- Dr. Lynne Moore, Assistant Professor of Epidemiology/Biostatistics, Laval University
- Dr. Avery Nathens, Canada Research Chair in Trauma Systems Development, Professor of Surgery, University of Toronto
- Dr. Nick Phan, Division of Neurosurgery, University of Toronto
- Dr. Fred Rivara, Seattle Childrens Guild Endowed Chair in Pediatrics, Professor in Pediatrics, University of Washington
- Bryan Singleton, Senior Manager for Emergency Health Services, Paramedic, Alberta Ministry of Health and Wellness
- Dr. Marc Swiontkowski, CEO of TRIA Orthopedic Center, University of Minnesota
- Dr. John Tallon, Past President Trauma Association of Canada, Associate Professor of Emergency Medicine and Surgery, Dalhousie University
- Dr. Andrew Travers, Medical Director of Nova Scotia Emergency Medical Systems, Assistant Professor, Dalhousie Emergency Department of Medicine
- Dr. Dave Zygun, Associate Professor of Critical Care Medicine, University of Calgary
- Dr. Tom Noseworthy, Professor of Health Policy and Management, University of Calgary
- Dr. Sharon Straus, Canada Research Chair in Knowledge Translation, University of Toronto



## Financial Disclosures/Other Potential Conflicts of Interest

The project was supported by a Partnerships in Health System Improvement Grant (PHE-91429) from the Canadian Institutes of Health Research and Alberta Innovates Health Solutions. Dr Stelfox was supported by a New Investigator Award from the Canadian Institutes of Health Research and a Population Health Investigator Award from Alberta Innovates Health Solutions. Funding sources had no role in the design, conduct, or reporting of this study. The authors declare no conflicts of interest.

## Adaptation

This measure was not adapted from another source.

## Date of Most Current Version in NQMC

2013 Jan

## Measure Maintenance

Unspecified

## Date of Next Anticipated Revision

Unspecified

## Measure Status

This is the current release of the measure.

## Measure Availability

Source available from the [Quality of Trauma in Adult Care \(QTAC\) Web site](#) .

This work is also available from the [Annals of Surgery Web site](#) : Santana MJ, Stelfox HT, Trauma Quality Indicator Consensus Panel. Development and evaluation of evidence-informed quality indicators for adult injury care. Ann Surg. 2014 Jan;259(1):186-92.

For more information, contact QTAC at the University of Calgary, Teaching Research & Wellness (TRW) Building, 3rd Floor, 3280 Hospital Drive NW, Calgary, AB, Canada, T2N 4Z6; Phone: 403-944-2334; Fax: 403-283-9994; E-mail: [qtac@qualitytraumacare.com](mailto:qtac@qualitytraumacare.com); Web site: [www.qualitytraumacare.com](http://www.qualitytraumacare.com)

.

## NQMC Status

This NQMC summary was completed by ECRI Institute on May 11, 2015. The information was verified by the measure developer on July 13, 2015.

## Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

The individual measures from the "Guide to Quality Indicators in Adult Trauma Care," are available from the [Quality of Trauma in Adult Care \(QTAC\) Web site](#) .

For more information, contact Tom Stelfox, MD, PhD, at the University of Calgary, Teaching Research & Wellness (TRW) Building, 3rd Floor, 3280 Hospital Drive NW, Calgary, AB, Canada, T2N 4Z6; Phone: 403-944-2334; Fax: 403-283-9994; E-mail: [tstelfox@ucalgary.ca](mailto:tstelfox@ucalgary.ca).

## Production

### Source(s)

Guide to quality indicators in adult trauma care. Version 3. Calgary (AB): Quality of Trauma in Adult Care, University of Calgary; 2013 Jan 29. 129 p. [111 references]

## Disclaimer

### NQMC Disclaimer

The National Quality Measures Clearinghouse (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the [NQMC Inclusion Criteria](#).

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. Moreover, the views and opinions of developers or authors of measures represented on this site do not necessarily state or reflect those of NQMC, AHRQ, or its contractor, ECRI Institute, and inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.